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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,958	12/04/2001	Ravi Shankar	6818-28	7800

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EXAMINER

NGO, CHUONG D

ART UNIT PAPER NUMBER

2193

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,958

Applicant(s)

SHANKAR, RAVI

Examiner

Chuong D. Ngo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The amendment filed on 02/16/2005 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is the amendments to figure 1 that change the values of K and L from " $1 * F$ " as originally disclosed to "1". In the original disclosure the value of K and L were disclosed to be functional depend on "one-half full scale (F)" as the are equal to " $1 * F$ ", but they are amended to be independent of "one-half full scale (F)" and equal to "1". The amendments are clearly not to correct mere typo or obvious errors, but to introduce new matter into the disclosure.

Applicant is required to cancel the new matter in the reply to this Office Action.

2. Claims 7-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

In particular, the claims recite a folding multiplier for performing a folding process on a multiplicand and a multiplier to generate a folded product. The folding process are disclosed in figure 1 which originally describes a flow chart of a folding process and includes notations "one-half full scale (F)" and " $1 * F$ ". However, the specification also fails to adequately explain what "F", " $1 * F$ " and their values are. In addition, the heart of the invention is the

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folding process. However, the meaning for the term “folding” and its function are unclear due to inconsistently disclosure. It is once defined in the specification that “‘folding’ can mean programmatically reducing the size of the multiplicand, multiplier or both until the reduced multiplicand and multiplier are below a threshold” (page 7, lines 11-13), and explained by an example that “to process the product of a 16-bit multiplicand and 16-bit multiplier using an 8-by-8 folding multiplier, the folding threshold can be 8 bits. Where either the value of the multiplicand or multiplier exceeds the folding threshold, first and second scaling factors K and L can be applied, respectively, to fold the excessive value below the folding threshold.” (page 9, line 8-12). From these teachings, it is clear that “folding” is to apply first and second scaling factors K and L to the multiplicand or multiplier to reduce 16-bit multiplicand and 16-bit multiplier, for example, to 8-bit in order to be processed using 8-by-8 folding multiplier. However, the detail of folding process as disclosed in figure 1 is not consistent with these teachings. In figure 1, the values P, Q, A and B are clearly not the multiplicand and the multiplier being folded to reduced in size, but rather some intermediate result, and the folding process as disclosed in figure 1 would clearly not reduce a 16-bit multiplicand and 16-bit multiplier, for example, to 8-bit in order to be processed using 8-by-8 folding multiplier as described in the above teachings. In fact, the folding value A as disclosed in figure 1 would have a much greater value than that of the multiplicand and the multiplier because an average of a 16-bit multiplicand and 16-bit multiplier, for example, would have 16 bits, and the square of the average minus  $\frac{1}{2}$  ( $A = (P + Q/2)^2$ , for  $K = 1$ ) would have about 31 bits. The specification should have provided consistent and adequate teachings with examples in order to enable one skilled in the art to make and/or use the invention.

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3. Claims 7-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 7, the limitation of the recitation “folding process”, line 6, is unclear. In addition, it is indefinite as to what the “first and second folding values”, lines 8, and “first and second scaling factors”, line 9, are and how they are related to the multiplicand and the multiplier. Claim 9 also has the same problems.

As per claim 11, it is unclear what is the “first folding value”, line 5, and “second folding value”, line 7, refer to.

4. Claim 7 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by White (4,313, 174).

White discloses in figure 3 a multiplier as claimed including A and B as the first and second in input signals, the upper parts output from elements (31 and 32) as the first and second folding values, and the values in elements (17 and 18) as the first and second scaling factors.

5. Applicant's arguments filed 02/16/2005 have been fully considered but they are not persuasive.

The amendments to the disclosure and applicant's explanation in the remarks fail to overcome the rejection under 35 U.S.C. 112, first paragraph, for the reasons that are clearly set forth in the above rejection.

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Regarding the rejection under 35 U.S.C. 102(b), it is respectfully submitted that figure 3 of White clearly shows a circuit for multiply A and B to produce a product AB as claimed. The fact that the multiply circuit of White employ ROMs which are not claimed in the present invention is irrelevant.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (571) 272-3731. The examiner can normally be reached on Tuesday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chuong D Ngo  
Primary Examiner  
Art Unit 2193

05/12/2005